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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/893,703	06/29/2001	Reizo Maeda	010829	4945

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WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP
1250 CONNECTICUT AVENUE, NW
SUITE 700
WASHINGTON, DC 20036

EXAMINER

ALEJANDRO, RAYMOND

ART UNIT PAPER NUMBER

1745

DATE MAILED: 02/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/893,703

Applicant(s)

MAEDA ET AL.

Examiner

Raymond Alejandro

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 December 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/13/04 has been entered.

This action is being provided in reply to the amendment accompanying the foregoing RCE. The applicants have not yet overcome the 35 USC 102 rejection. Refer to the abovementioned amendment for specific details on applicant's rebuttal arguments. Thus, the present claims are rejected again over the same art; in addition, the present claims are also rejected over newly discovered art as well and for the reasons of record:

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
2. Claims 1-5 and 9 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
3. Claim 1 is indefinite because the negative limitation "*wherein an aqueous polymeric material not including a fluorocarbon resin*" is an attempt to claim the invention by excluding what the inventors did not invent rather than distinctly and particularly pointing out what they did invent. That is, the claims tend to define the invention in terms of what it is not, rather than

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pointing out the invention. *In re Schechter, 205 F.2d 185, 98 USPQ 144 (Refer to MPEP 2173.05(i) Negative Limitations).*

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-5 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Yuasa et al 5250369.

The instant application is directed to a hydrogen absorbing alloy electrode wherein the disclosed inventive concept comprises the specific polymeric material coated thereon. Other limitations include the specific polymeric materials and the specific weight percent.

With respect to claim 1:

Yuasa et al disclose that a hydrogen absorbing alloy negative electrode for use in storage type battery is prepared through a process in which an alkali-resisting organic high molecule such as polyethylene, fluorocarbon polymer or the like, is added as a binding agent to a pulverized hydrogen absorbing alloy, and the resulting mixture is pressed onto or filled into an electrically conductive collector such as punching metal or a foam metal (Col 1, lines 37-45/Col 3, lines 50-67). Other alkali-resisting resins (binding agent) such as carboxymethylcellulose and methylcellulose or poly(vinyl alcohol) can also be employed (Col 14, lines 6-10). *It is noted that the binding agent assists to hold fast or adhere the electrode material to conductive collector.*

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Examiner's note: *it is noted that the transitional phrase "composed of" is construed as an open-ended phrase and therefore does not exclude other components.*

Example 1 shows the use of an aqueous solution of poly(vinyl alcohol) (the binding agent) mixed into the hydrogen absorbing alloy powder to form paste; and a foamed nickel porous matrix (the current collector) which is filled with the prepared paste and pressed (EXAMPLE 1/COL 4, lines 1-10). Example 7 further shows the hydrogen absorbing alloy negative electrode is coated with polyethylene (the coating polymeric material) (EXAMPLE 7/COL 4, lines 65-68). *Thus, in this case, the hydrogen absorbing alloy electrode consist of the hydrogen absorbing powder and a binding agent composed of a polymeric material (polyvinyl alcohol) adhered to the current collector, and being coated with polyethylene. Hence, the polymeric material in the coating layer is different from the polymeric material in the binding agent.*

With respect to claims 2-3:

It is disclosed that polyethylene used may be replaced by one of thermoplastic resins such as ABS resin (COL 14, lines 26-30). *It is noted that ABS resin stands for thermoplastic resins made of acrylonitrile-butadiene-styrene copolymer. It is also noted that styrene is an aromatic olefin and butadiene is a conjugated diene.*

With respect to claims 4-5:

It is disclosed that the hydrogen absorbing ally negative electrode contains the resin by an amount of 1.5 wt % of the electrode (COL 5, lines 60-63).

With respect to claim 9:

It is disclosed that the hydrogen absorbing alloy electrode is for use in an alkaline storage battery (ABSTRACT/ COL 1, lines 11-14).

Thus, the claims are anticipated.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1-5 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yuasa et al 5250369 in view of Kinoshita et al 5527638.

The instant application is directed to a hydrogen absorbing alloy electrode wherein the disclosed inventive concept comprises the specific polymeric material coated thereon. Other limitations include the specific polymeric materials and the specific weight percent.

With respect to claim 1:

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Yuasa et al disclose that a hydrogen absorbing alloy negative electrode for use in storage type battery is prepared through a process in which an alkali-resisting organic high molecule such as polyethylene, fluorocarbon polymer or the like, is added as a binding agent to a pulverized hydrogen absorbing alloy, and the resulting mixture is pressed onto or filled into an electrically conductive collector such as punching metal or a foam metal (Col 1, lines 37-45/Col 3, lines 50-67). Other alkali-resisting resins (binding agent) such as carboxymethylcellulose and methylcellulose or poly(vinyl alcohol) can also be employed (Col 14, lines 6-10). *It is noted that the binding agent assists to hold fast or adhere the electrode material to conductive collector.*

Examiner's note: *it is noted that the transitional phrase "composed of" is construed as an open-ended phrase and therefore does not exclude other components.*

Example 1 shows the use of an aqueous solution of poly(vinyl alcohol) (the binding agent) mixed into the hydrogen absorbing alloy powder to form paste; and a foamed nickel porous matrix (the current collector) which is filled with the prepared paste and pressed (EXAMPLE 1/COL 4, lines 1-10). Example 7 further shows the hydrogen absorbing alloy negative electrode is coated with polyethylene (the coating polymeric material) (EXAMPLE 7/COL 4, lines 65-68). *Thus, in this case, the hydrogen absorbing alloy electrode consist of the hydrogen absorbing powder and a binding agent composed of a polymeric material (polyvinyl alcohol) adhered to the current collector, and being coated with polyethylene. Hence, the polymeric material in the coating layer is different from the polymeric material in the binding agent.*

With respect to claims 2-3:

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It is disclosed that polyethylene used may be replaced by one of thermoplastic resins such as ABS resin (COL 14, lines 26-30). *It is noted that ABS resin stands for thermoplastic resins made of acrylonitrile-butadiene-styrene copolymer. It is also noted that styrene is an aromatic olefin and butadiene is a conjugated diene.*

With respect to claims 4-5:

It is disclosed that the hydrogen absorbing alloy negative electrode contains the resin by an amount of 1.5 wt % of the electrode (COL 5, lines 60-63).

With respect to claim 9:

It is disclosed that the hydrogen absorbing alloy electrode is for use in an alkaline storage battery (ABSTRACT/ COL 1, lines 11-14).

Yuasa et al disclose a hydrogen absorbing alloy electrode according to the foregoing aspects. However, Yuasa et al does not expressly disclose (*as argued by the applicants*) the specific aqueous polymeric material coating layer.

Kinoshita et al disclose a hydrogen storage alloy electrode comprising an electrically conductive support (the current collector) and a mixture supported on said conductive support (ABSTRACT). It is disclosed that the mixture supported thereon includes a styrene-butadiene copolymer (*it is noted that styrene-butadiene is an aqueous polymeric material*) (COL 3, lines 1-12/ CLAIM). Kinoshita et al clearly disclose the electrode is configured by coating the metal sheet (the conductive support) with the mixture composed mainly of the hydrogen storage alloy and the styrene-butadiene copolymer (COL 6, lines 3-7 and 30-34). *Thus, the styrene-butadiene also included in the mixture coats the electrode surface per se.*

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The following parts of the Kinoshita et al's disclosure can be found in the abstract; at col 3, lines 3-12; and at col 6, lines 2-6:

[57]

ABSTRACT

A hydrogen storage alloy electrode comprising, an electrically conductive support made of a punched or perforated metal sheet, a mixture supported on said conductive support

a mixture supported on the electrically conductive support, and

said mixture including;

a hydrogen storage alloy powder,

a styrene-butadiene copolymer having a styrene to butadiene weight ratio in a range of 100:30 to 100:100, as a binder, 10

5 An electrode is configured by coating the punched or perforated metal sheet having the abovementioned regular perforation pattern with a mixture composed mainly of the hydrogen storage alloy powder. The electrode thus obtained

In view of the above, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the specific aqueous polymeric material coating layer of Kinoshita et al on the electrode of Yuasa et al because Kinoshita et al disclose that a small decrease in the capacity of the battery configured with the electrode attributable to the repetition of the charging and discharging processes and an excellent cycle life are advantageous features obtained by adding a styrene-butadiene copolymer resin (*the specific aqueous polymeric material coating layer*) in the mixture coating the electrode. Thus, Kinoshita et al at once envisage the advantage of using aqueous polymeric material as the electrode coating material; and Kinoshita et al directly teach the use of such aqueous polymeric material as instantly claimed. *Furthermore, the examiner likes to clarify that since the styrene-butadiene copolymer resin per se (the specific aqueous polymeric material coating layer) is coating the electrode*

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itself, the prior art definitely meets the claimed requirement of having an aqueous polymeric material not including a fluorocarbon resin applied thereon, to form a coating layer.

Response to Arguments

9. Applicant's arguments filed 12/13/04 have been fully considered but they are not persuasive *{with respect to the 35 USC 102 rejection}*.

10. Applicant's arguments with respect to claims 1-5 and 9 have been considered but are moot in view of the new ground(s) of rejection *{with respect to the 35 USC 103 rejection}*.

11. Although believed unnecessary due to the new ground of rejection, the examiner wishes to briefly address certain applicant's points/issues. It is noted that the 35 USC 103 rejection has been issued to fairly address applicant's arguments regarding "the intended aqueous polymeric material", but, in no way, said rejection should be construed as an acquiescence or concession that Yuasa et al's teaching, individually, does not satisfy the claimed requirement.

12. In response to applicant's arguments that "*the Examiner is apparently interpreting the phrase of claim 1, 'an aqueous polymeric material except fluorocarbon resin is applied thereon' as meaning that at least one component of the coating does not include fluorocarbon resin*", the examiner merely asserts that even assuming arguendo that such applicant's characterization of the examiner's interpretation is correct, the prior art of record still clearly uses polyethylene as the electrode coating material (See Yuasa et al'369: EXAMPLE 7 at COL 4, lines 65-68); and to the best of the examiner's knowledge the polyethylene material is not a fluorocarbon resin. Additionally, even though its degree of being "*an aqueous polymeric material*" has been questioned by applicants, the fact is that: a) applicant's arguments stating that

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the FEP is not an aqueous polymeric material because it is a hydrophobic resin is yet insufficient as the present claim language also fails to fairly stipulate the degree of being aqueous. That is, under a broadest reasonable claim interpretation and in the absence of a specific degree of hydrophobicity or hydrophilicity and/or water-repellency in the specification to ascertain such requisite degree, it is believed that the prior art still provides the necessary structural and functional interrelationship of including a polymeric material not including a fluorocarbon resin per se.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Raymond Alejandro whose telephone number is (571) 272-1282. The examiner can normally be reached on Monday-Thursday (8:00 am - 6:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Raymond Alejandro



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